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Kapvay

Russell E. Anderson
Parkland College

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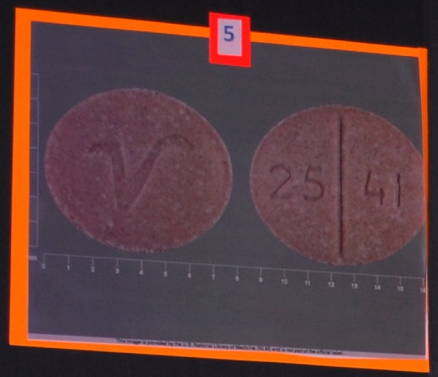
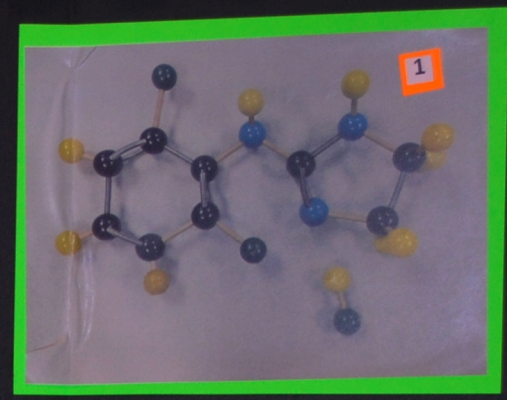
KAPVAY



Russell Anderson
Parkland College
CHEM 106-003



Generic Name
Clonidine Hydrochloric

Chemical Formula
$C_9H_9Cl_2N_3 \bullet HCl$

All Available Doses
0.1 mg and 0.2 mg Extended Time Release

Uses
Clonidine Hydrochloride is used to help manage hypertension, it can be used in the treatment of severe pain. Clonidine Hydrochloride can also be used to help manage ADHD.

Trade Names
Catapres, Catapres-TTS, Dixaril, Duraclon, Kapvay

Chemical Names
N-(2,6-Dichlorophenyl)-4,5-dihydro-1H-imidazol-2-amine; 2-(2,6-dichloroanilino)-2-imidazoline; 2,6-dichloro-N-2-imidazolidinylidenebenzenamine; 2-(2,6-dichloroanilino)-1,3-diazacyclopentene-(2); 2-[(2,6-dichlorophenyl)-imino]-2-imidazoline.

Calculating Molar Mass
C(9)(12.01) = 108.09 g/mol
H(10)(1.01) = 10.10 g/mol
Cl(3)(35.45) = 106.35 g/mol
N(3)(14.01) = 42.03 g/mol
266.57 g/mol
$C_9H_9Cl_2N_3 \bullet HCl$

Dose Chosen
0.1 Mg

How Does The Body Break Down The Drug?
Clonidine Hydrochloride stimulates alpha2-adrenegic receptors in the central nervous system to inhibit sympathetic cardioaccelerator and vasomotor centers through centrally acting receptor agonist. These central actions reduce plasma concentrations of norepinephrine which decreases systolic and diastolic blood pressure and heart rate.

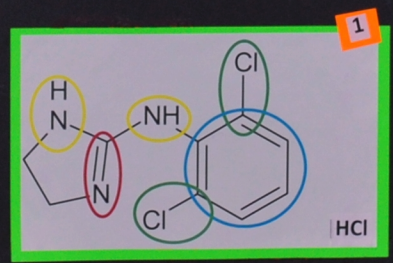
Molecules Per Chosen Dos
(0.1 mg)(1 g/1000 mg)(1 mol $C_9H_9Cl_2N_3$/266.55 g $C_9H_9Cl_2N_3$)(6.02
10^{23} molecules $C_9H_9Cl_2N_3$/ 1 mol $C_9H_9Cl_2N_3$)
2.0×10^{17} molecules of $C_9H_9Cl_2N_3$
2.0×10^{17} molecules of $C_9H_9Cl_2N_3$
2.0×10^{17} molecules of $C_9H_9Cl_2N_3$

How Does The Body Take In The Drug?
Clonidine Hydrochloride is administered orally and should be swallowed whole. Clonidine Hydrochloride is readily absorbed in the gastrointestinal tract.

Literature Value For The Molar Mass
267 g /mol $C_9H_9Cl_2N_3 \bullet HCl$

SOURCES
1. (2013). Clonidine Hydrochloride. In O'Neil, M.J., Heckelman, P.E., Dobbelaar, P.H., & Roman, K.J. (Eds.) *The Merck Index: An Encyclopedia of Chemicals, Drugs, and Biologicals* (p. 427-428). Cambridge, UK: Royal Society of Chemistry.
2. Wilson, B. A., Shannon, M. T., & Shields, K. M. (2015). Clonidine Hydrochloride. *In Pearson Nurse's Drug Guide 2015* (pp.367-370). Hoboken, NJ: Pearson Education, Inc.
3. Physicians' Desk Reference. (2015). Kapvay. *PDR.net* retrieved from www.pdr.net/drug-summary/kapvay?druglabelid=2283&id=2998
4. Drugbank. (2013, September 16). Clonidine. *Drugbank*. Retrieved from http://www.drugbank.ca/drugs/DB00575
5. United States National Library of Medicine (2015, May 11). Clonidine Hydrochloride. *Pillbox*. Retrieved from http://pillbox.nlm.nih.gov/assets/large/00603-2957-21_46232309.jpg
6. (2015). Organic Chemistry. In Drake, S. A. (Ed.) *Chemistry 106 Classroom Supplement Fall 2013 Revision* (pp. 155-175). Champaign, IL: Stripes L. L. C.

How Does The Body Eliminate The Drug?
Clonidine Hydrochloride is eliminated 80% through urine and 20% in feces.



Functional Groups- Contributions
Aromatic (1) = Hydrophobic
Amine (2) = Hydrophilic
Halo (2) = Hydrophilic
Imine (1) = Hydrophilic

Tablets Per Chosen Dose
(0.1 mg)(1 Tablet/0.1 mg)
1 Tablet

What Does The Body Do With The Drug After The Drug Is Absorbed?
Clonidine Hydrochloride is metabolized in the liver after the body is done using the drug.

Ratio Of Hydrophilic To Hydrophobic Relate To Water Solubility
5 Hydrophilic / 1 Hydrophobic

-Aromatic –Hydrophobic
-Amine - Hydrophilic
-Halo - Hydrophilic
-Imine - Hydrophilic

Water Solubility
0.48 mg/mL